INSTRUCTIONS

-J01523 REV. 9-18-03

Kit Number 67182-95D

XLH TACHOMETER KIT

General

This kit is designed for installation on 1995 - 2003 XLH 883 model motorcycles equipped with an electronic speedometer and no tachometer. Does not fit 1999 and later XL883 Custom models. See Service Parts illustration for kit contents.

NOTE

USE THE APPROPRIATE SERVICE MANUAL PROCEDURE! Service Manuals are available from your Harley-Davidson dealer. If the procedure is not within your capabilities or you do not have the correct tools, have your Harley-Davidson dealer perform the installation.

Installation

GENERAL

To install this kit, you will be removing the following: **fuel tank, speedometer bracket, speedometer and indicator lights in base of speedometer bracket.** You will also have to remove the seat, disconnect the electronic speedometer harness from connector [65] under the seat and disconnect connector [20] under the headlight bracket. Read all the instructions carefully before you begin the tachometer installation. Connector numbers in brackets, for example [65], are the identifying numbers used in Service Manual wiring diagrams.

Removal

ELECTRONIC SPEEDOMETER AND BRACKET

⚠WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect battery cables (negative cable first) before proceeding.

⚠WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

1. Remove handlebar clamp screws securing speedometer bracket. Gently move speedometer forward and hang from mirror with cable strap.
2. Refer to applicable Service Manual and remove seat and fuel tank following Service Manual procedures.

⚠WARNING

Stop the engine when refueling or servicing the fuel system. Do not smoke or allow open flame or sparks near gasoline. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00002a)

3. Remove the two bolts that secure the headlamp bracket and allow headlamp and bracket to tilt forward as shown in Figure 1.
4. See Figure 2. Press the button on connector [20] to unplug.
5. Follow the speed sensor harness (connected to speedometer) that is routed down frame backbone to connector [65] under seat.

Figure 1. (1995-96 style connector shown)

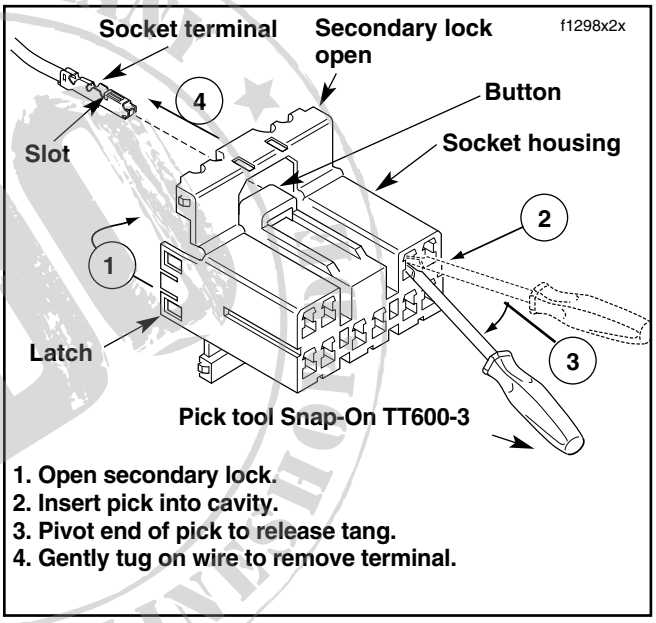


Figure 2. Amp Multilock Socket Connector Wire Removal

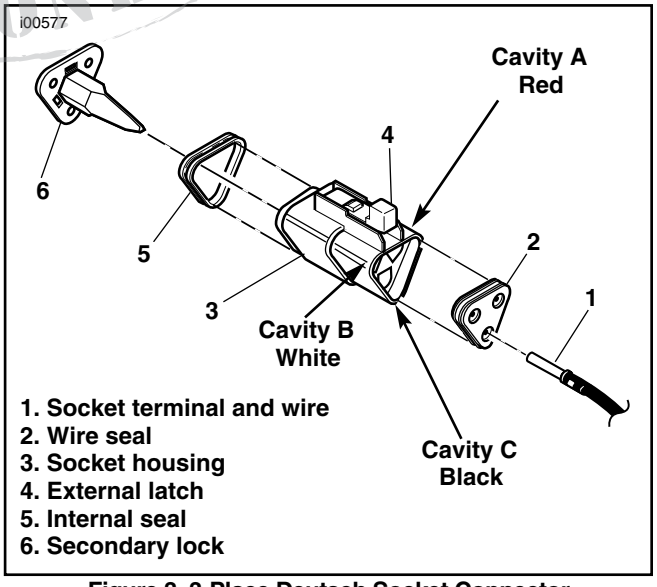


Figure 3. 3-Place Deutsch Socket Connector

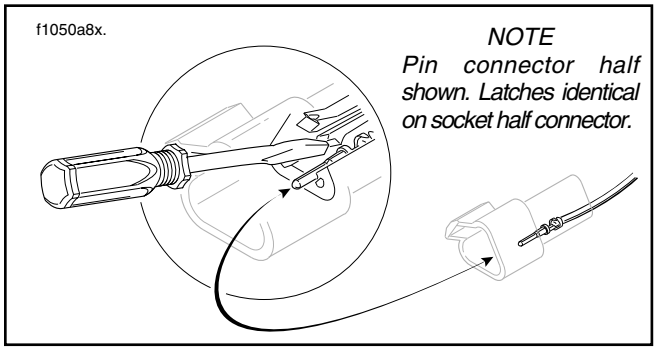


Figure 4. Depressing Terminal Latches

6. Slide connector [65] forward to disengage connector from T-stud.
7. See Figure 3. Depress external latch (4) and unplug the connector.
8. See Figure 3. Remove the secondary locking wedge (6) as follows: Insert the blade of a small screwdriver between the socket housing (3) and locking wedge (6) inline with the socket holes. Turn the screwdriver 90 degrees to pop the wedge up.
9. See Figure 4. Gently depress terminal latches inside socket housing and back out sockets through holes in rear wire seal. Cavity letters and wire colors are shown in Figure 3. Cavity letters are molded in the housing.
10. Carefully note how the speed sensor harness is routed. Pull the speed sensor harness forward through the cable straps. Cut cable straps only if required.
11. Cut cable strap holding speedometer and bracket to mirror. Place the speedometer and bracket on a clean work bench.

REMOVING SPEEDOMETER LEADS FROM CONNECTOR [20]

1998 AND EARLIER MODELS

1. See Figure 2. Bend back the latch slightly and free one side of secondary lock, then repeat the step to release the other side. Rotate the secondary lock outward on hinge to access terminals in chambers of connector housing.
2. Looking in the terminal side of the connector (opposite secondary lock), take note of cavity next to each terminal.
3. See Figure 5. Remove the following wires and terminals from connector [20] by following the procedure in step 4:

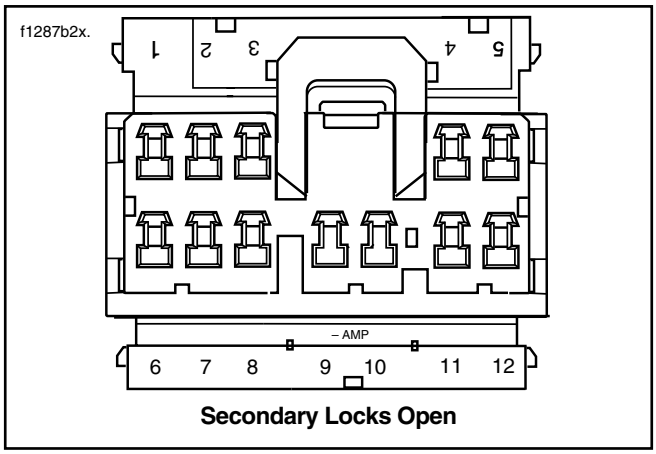


Figure 5. Terminal Numbers Stamped On Secondary Locks (12-place socket housing shown)

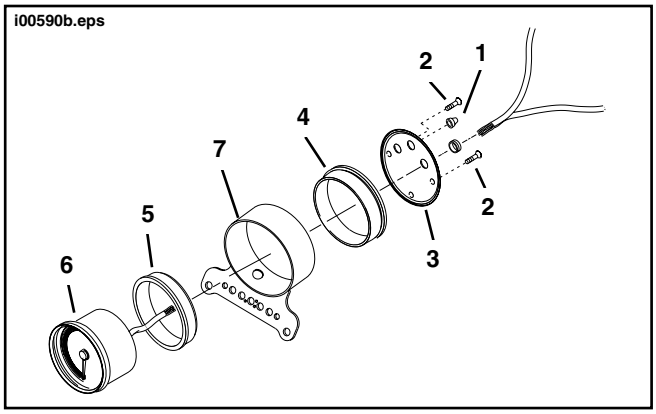


Figure 6.

Wire Color	Cavity Number
Orange/white	1
White/green	2
Black	12

4. See Figure 2. With the flat side of pick tool against the terminal, insert the pick (Snap-On TT600-3) into the cavity until it stops. Pivot the end of the pick away from the terminal and gently tug on wire to pull terminal from chamber. Do not tug on the wire until the tang is released or the terminal will be difficult to remove. A “click” is heard if the tang is engaged but then inadvertently released. Repeat the step without releasing the tang.
5. Slide the wires removed in step 4 above out of the plastic conduit covering the wires connected to connector [20].

1999 AND LATER MODELS

1. Refer to the Deutsch Electrical Connector section in Section 7 of the 1999 or later XLH Service Manual. Depress external latches on socket half of connector and separate socket and pin halves. Follow the instructions for "Removing and Installing Sockets" and remove the following wires from the connector [20]:

Wire Color	Cavity Number
Orange/white	1
White/green	2
Black	12

2. Slide the wires removed in Step 1 above out of the plastic conduit covering the wires connected to the connector [20].

REMOVING SPEEDOMETER FROM STOCK BRACKET

1. Note location of all indicator light components mounted in speedometer bracket. Each indicator lamp has the lamp’s function printed on one of the lamps leads. Remove the two screws that secure the indicator light components to the speedometer bracket. Retain screws and indicator light components for installation on speedometer/tachometer bracket later.
2. See Figure 6. Unscrew boot (1), if necessary, from speedometer reset switch by turning it counterclockwise. Remove two cover screws (2) and the rear cover (3).
3. Note position of rear speedometer gasket (4) and remove it. Gently push on rear of speedometer while simultaneously pulling speedometer and front gasket from bracket.
4. Do not remove front gasket (5) from the speedometer (6).

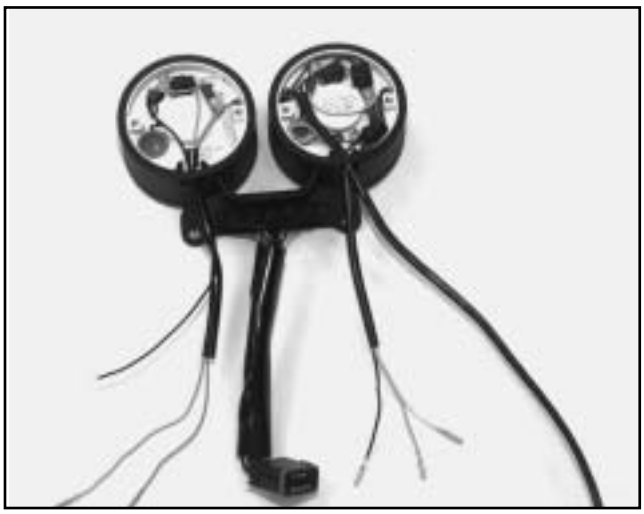


Figure 7. Speedometer in Double Bracket

INSTALLING SPEEDOMETER IN DOUBLE BRACKET

NOTE

The tachometer will be mounted in the right side of the double bracket as received in the kit.

1. See Figure 7. Feed wires from speedometer through front of left opening in double bracket. Lubricate the front and rear gaskets with isopropyl alcohol or glass cleaner to ease installation.
2. Insert speedometer in double bracket making certain wire guides are aligned at bottom of bracket.
3. Place rear gasket in position and align gasket tabs with anti-rotational slots. Work gasket into space between speedometer and bracket by pushing speedometer against one side of bracket while pushing gasket into position at the opposite side.
4. Check that reset switch is in position and that all wires are positioned so they will not be pinched by rear cover.
5. Install rear cover on speedometer, install cover screws and reset switch boot.

ASSEMBLING TACHOMETER HARNESS

1. See Figure 8. As dictated by model year, assemble one of the harnesses shown from wires, conduit and connector provided in kit. The connector cavity numbers are shown on socket housing (11) and wires must be inserted as follows:

Wire Color	Cavity Number
Orange	1
Black	2
Pink	3

2. This harness will plug directly into the back of the tachometer. After plugging wire ends into connector shown, cover wires with conduit from kit.

CONNECTING SPEEDOMETER/TACH. GROUND LEADS

1. Cut speedometer black ground lead 1 in. from existing terminal. Strip 3/8 in. insulation from both the wire ends adjacent to the cut.
2. Strip 3/8 in. insulation from tachometer black ground lead.
3. See Figure 9. Using one of the butt connectors from the kit connect the ground leads as shown. Refer to "SEALED BUTT CONNECTORS" in the Service Manual for a complete procedure.

CONNECTING SPEEDOMETER/TACHOMETER LEADS TO CONNECTOR [20]

1. Tape the three speedometer wires with the socket terminals on their ends together and slide them through the large conduit so the terminals are positioned next to connector [20]. Place the tachometer harness next to the connector also.

NOTE

Make certain the slot in the terminal faces the tang in the chamber for proper installation. On the socket side of the connector, tangs are at the top of each chamber, so the socket terminal slot (on the same side as the crimp tails) must face upward. Up and down can be determined by the position of the release button (used to separate the pin and socket halves), the button always being the top of the connector.

2. **For 1998 and earlier:** Remove tape from the speedometer wires, and insert the terminals into connector [20] as follows:

Instrument	Wire Color	Cavity Number
Speedometer	Orange/white	1
Speedometer	White/green	2
Speedometer	Black	12
Tachometer	Orange	6
Tachometer	Pink	7

(See Figure 11 for cavity number location.)

For 1999 and later: Insert the terminals into connector [20] as shown above; however, since there is not an open #6 cavity in connector [20] for 1999 and later models, the Orange wire will need to be spliced into the Orange/White wire coming out of the speedometer at a convenient location. Refer to "SEALED BUTT CONNECTORS" in the Service Manual for a complete procedure.

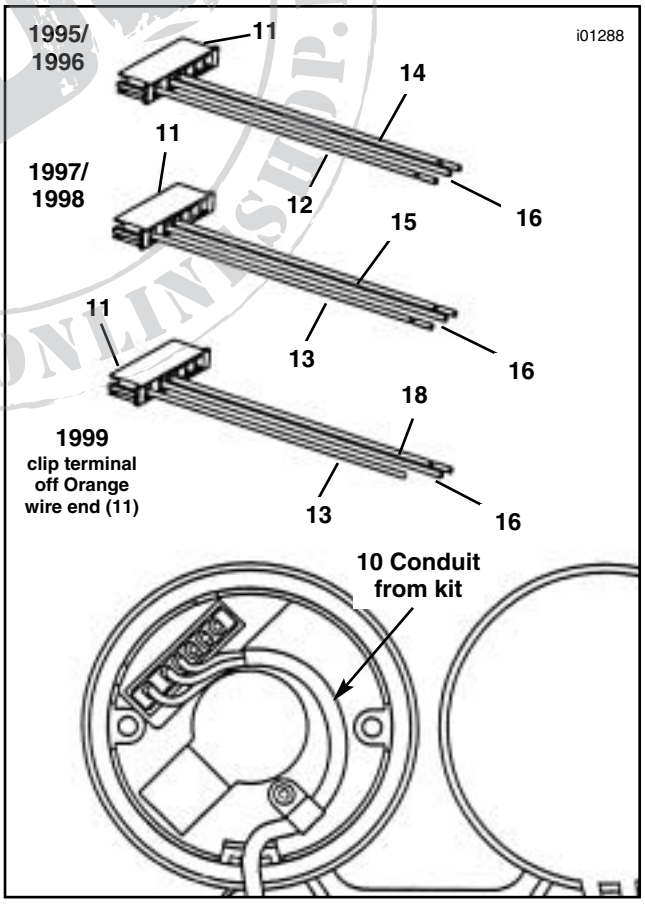


Figure 8. Connecting Harness To Tachometer Callouts (Corresponds to wires listed in Service Parts)

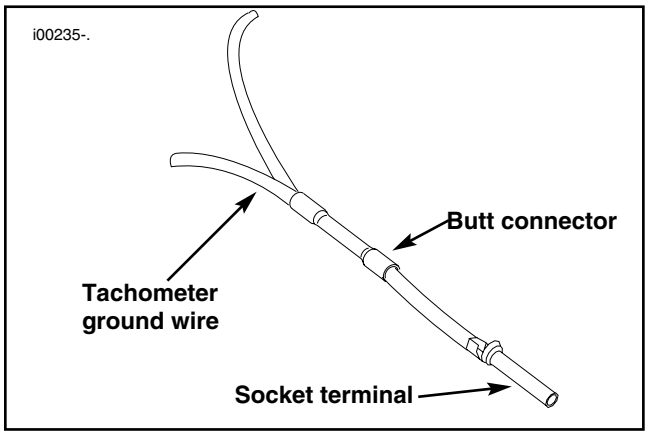


Figure 9. Connecting Tachometer & Speedometer Grounds

3. See Figure 2. After all wires are in place, close the secondary locks on the socket housing.

INSTALLING INDICATOR LIGHTS ON DUAL BRACKET

1. See Figure 10. Place the indicator light bezel and color strip on front of dual bracket. Make certain color strip stays in position on locating pins.
2. Install indicator light socket assembly on rear of dual bracket making sure locating pins on bezel enter holes in socket assembly. Install two mounting screws.

INSTALLING SPEEDOMETER/TACHOMETER

1. Hang speedometer/tachometer assembly on mirror with cable strap and connect wiring as follows:
2. Route speedometer 3-wire harness back to its original position. See Figure 3. Insert wires and terminals into connector [65].
3. See Figure 11. Install secondary lock with arrow positioned as shown.

NOTE

If the secondary lock (wedge) does not slide into the installed position easily, verify that all terminals are fully installed in the socket housing. The secondary lock indicates when terminals are not properly installed by not entering its fully installed position.

4. Install cable straps to replace any that were removed.
5. Mate halves of connector [65].
6. See Figure 10. Install speedometer/tachometer assembly on handlebar clamp as shown using original fasteners. Tighten “snug-tight”.
7. Connect and install connector [20].
8. Refer to applicable Service Manual and install fuel tank.
9. Refer to applicable Service Manual and install seat.

⚠WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

Final Checks and Adjustments

1. If necessary, adjust the handlebar to the rider’s normal position. Hold the handlebar and loosen rear clamp bolts. Position and adjust handlebars and tighten rear screws to 12-15 ft-lbs.(16.3-20.3 Nm).

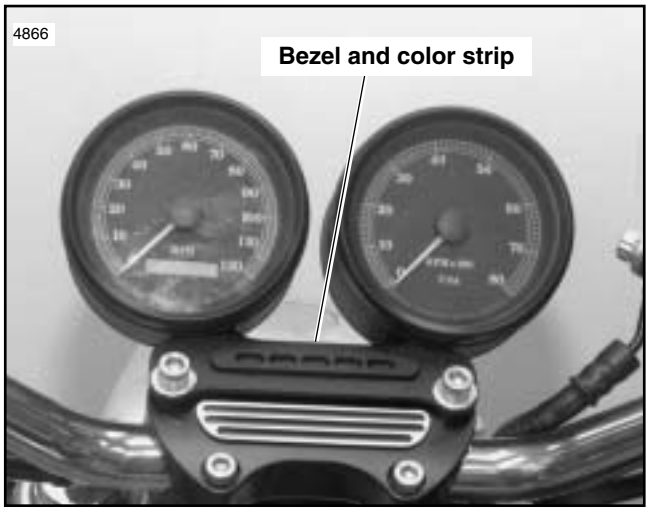


Figure 10. Tachometer & Speedometer Installed

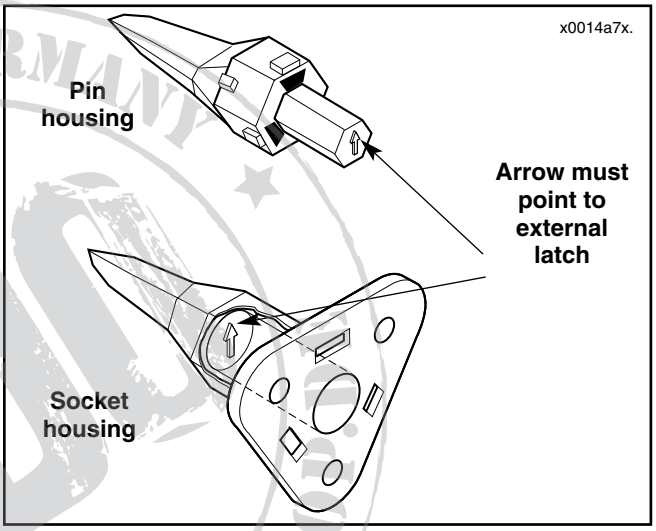


Figure 11. Secondary Lock Positioning

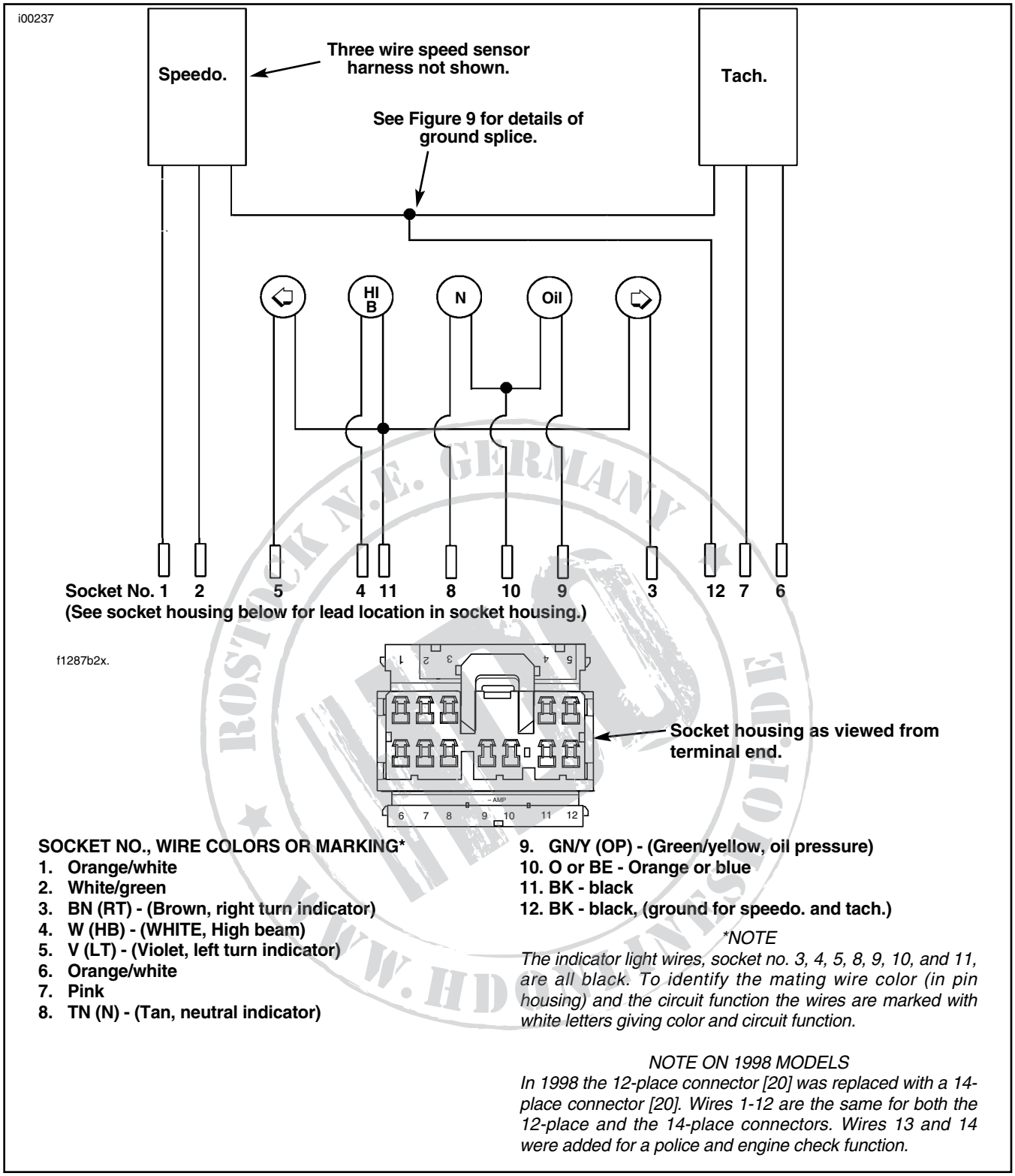
NOTE

When handlebar installation is complete, the upper and lower clamps have contact with the cast-in boss in front and have a slight gap at the rear.

⚠WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

2. Connect the battery cables, positive cable first.
3. Turn ignition/light switch to ON. Check that the indicator lights, signal lights and headlamp all function properly.
4. Start the engine, check the tachometer operation and check that the indicator lights are working correctly.
5. If tachometer does not function, see Figure 12 and check that all wiring connections were correctly made.
6. Test ride motorcycle to verify speedometer is functioning properly.


i00237
Speedo.
Three wire speed sensor harness not shown.
Tach.
See Figure 9 for details of ground splice.
HI B
N
Oil
Socket No. 1 2 5 4 11 8 10 9 3 12 7 6
(See socket housing below for lead location in socket housing.)
f1287b2x.
Socket housing as viewed from terminal end.
6 7 8 9 10 11 12

SOCKET NO., WIRE COLORS OR MARKING*

1. **Orange/white**
2. **White/green**
3. **BN (RT) - (Brown, right turn indicator)**
4. **W (HB) - (WHITE, High beam)**
5. **V (LT) - (Violet, left turn indicator)**
6. **Orange/white**
7. **Pink**
8. **TN (N) - (Tan, neutral indicator)**
9. **GN/Y (OP) - (Green/yellow, oil pressure)**
10. **O or BE - Orange or blue**
11. **BK - black**
12. **BK - black, (ground for speedo. and tach.)**

**NOTE*

The indicator light wires, socket no. 3, 4, 5, 8, 9, 10, and 11, are all black. To identify the mating wire color (in pin housing) and the circuit function the wires are marked with white letters giving color and circuit function.

NOTE ON 1998 MODELS

In 1998 the 12-place connector [20] was replaced with a 14-place connector [20]. Wires 1-12 are the same for both the 12-place and the 14-place connectors. Wires 13 and 14 were added for a police and engine check function.

Figure 12. Speedometer/Tachometer Wiring Diagram

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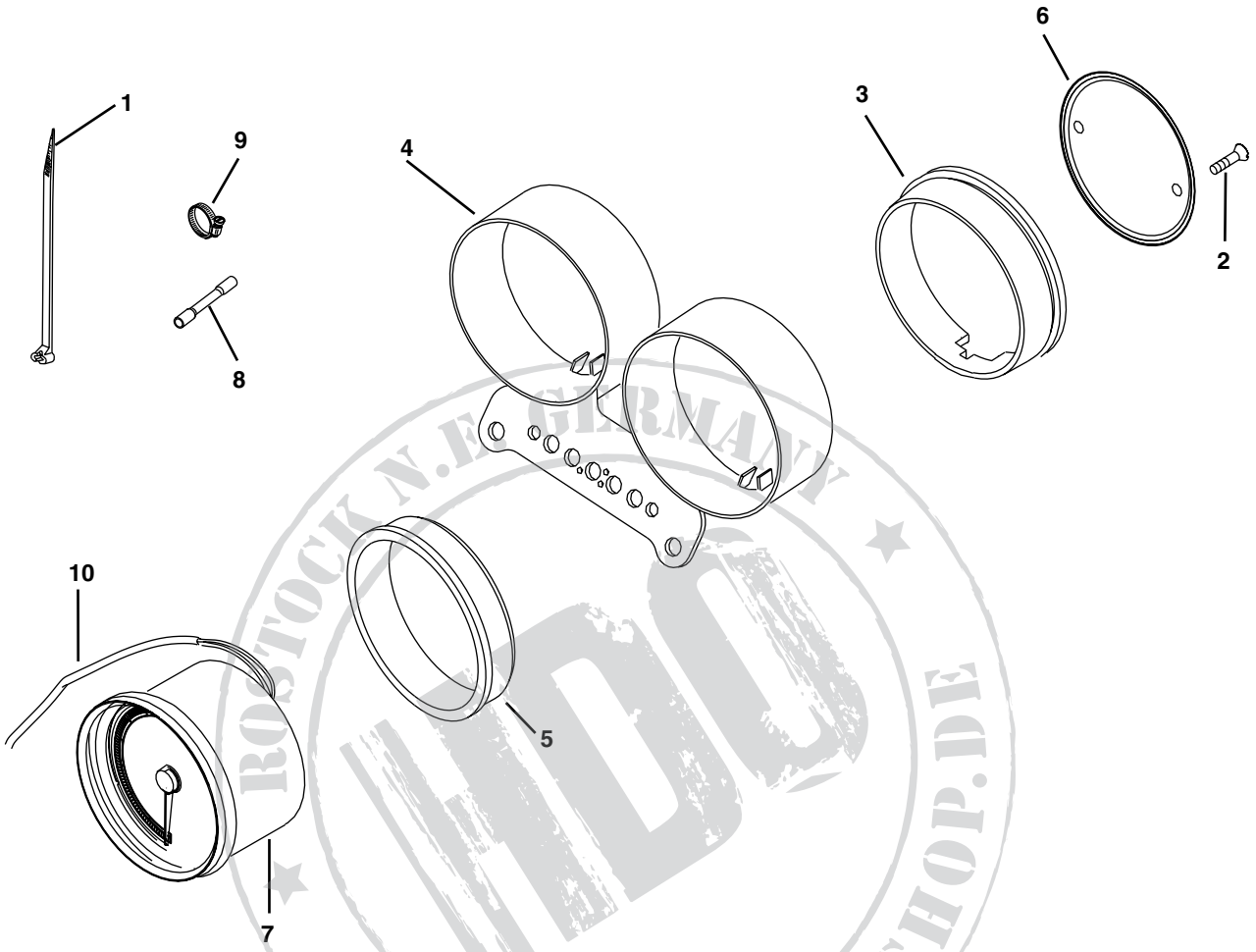

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Item	Description	Part No.	Item	Description	Part No.
1	Cable straps (6)	10006	14	Socket/Deutsch socket *Pink wire	68945-98
2	Screws, cover (2) #8-32 x 11/64 in.	2361	15	Socket/Amp socket *Pink wire	68946-98
3	Gasket, rear	67104-95	16	Socket/no terminal *Black wire	68947-98
4	Bracket, speedo/tach	67338-97	17	*Tachometer light bulb, with color diffuser (for 1998 and later models)	67385-98
5	Gasket, front	67121-95	18	Socket/Deutsch socket *Pink wire	68987-99
6	Cover, tach. rear	67319-95	19	*Conduit, 5/16” vinyl (9” long)	not sold
7	Tachometer	67321-99			
8	Butt splice, blue (2)	70586-93			
9	Hose clamp (2)	9946			
10	*1/2 in. vinyl conduit, 9 in. long	not sold			
11	*6-place socket housing	72081-99			
12	Socket/Deutsch socket *Orange wire	68943-98			
13	Socket/Amp *Orange wire	68944-98			

Not shown. See Figure 8 for instructions on assembling connector, wires, and conduit into a harness.